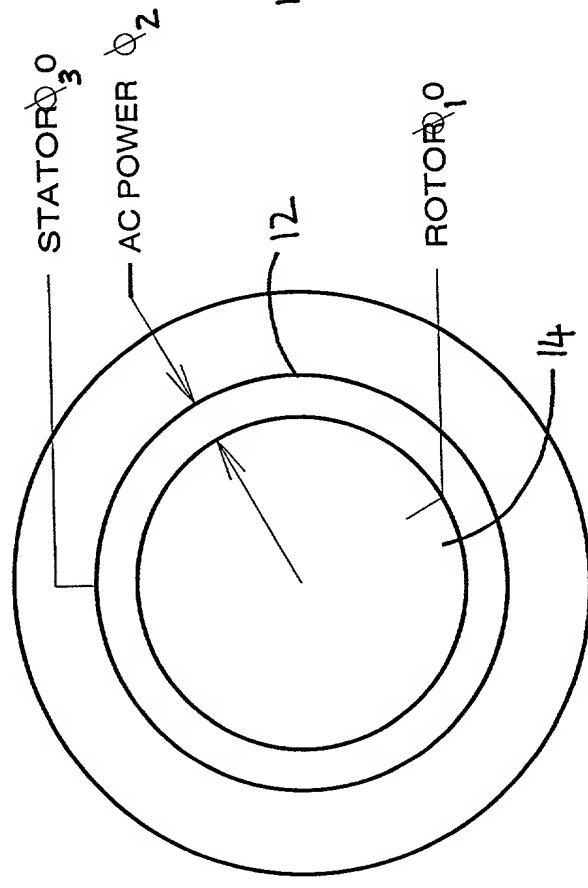


EXAMPLE OF ROTOR FLUX VECTOR DIRECTION CALCULATION

CASE: AC POWER ϕ_2 60
ROTOR ϕ_1 ANGLE 150

RESULT:
 $60 - 150 = -90$



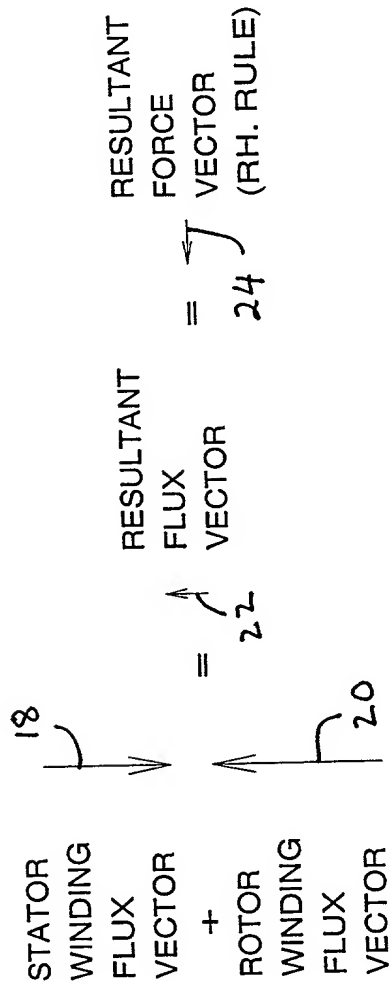
ROTOR FLUX VECTOR MUST POINT AT -90 DEGREES TO REMAIN IN PHASE-LOCK

ALL NUMBERS IN DEGREES

Fig. 1

EXAMPLE OF ROTOR FLUX VECTOR MAGNITUDE CALCULATION

CASE:
STATOR WINDING FLUX VECTOR MAGNITUDE 3 UNITS
ROTOR WINDING FLUX VECTOR MAGNITUDE 4 UNITS



ROTOR WILL ACCELERATE COUNTERCLOCKWISE

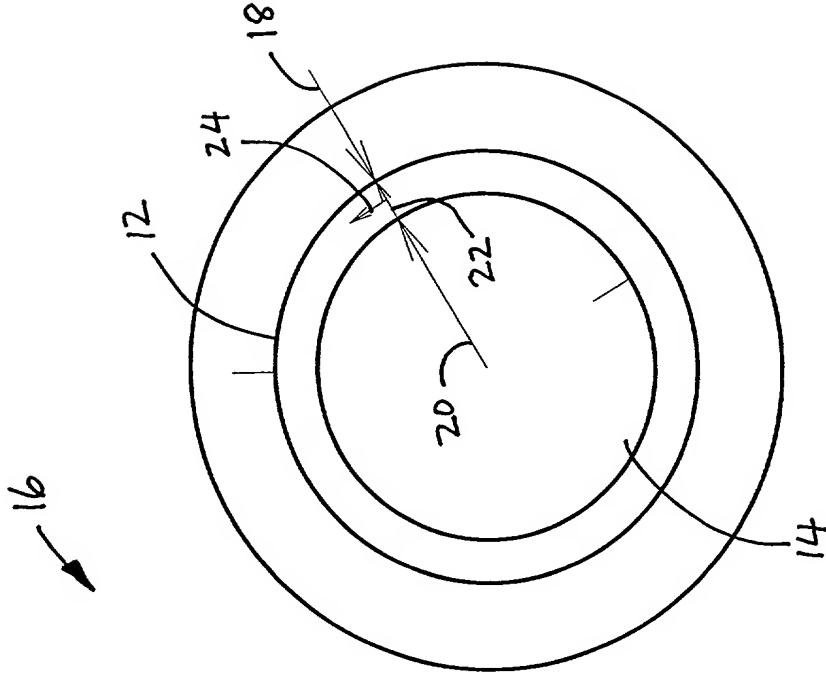
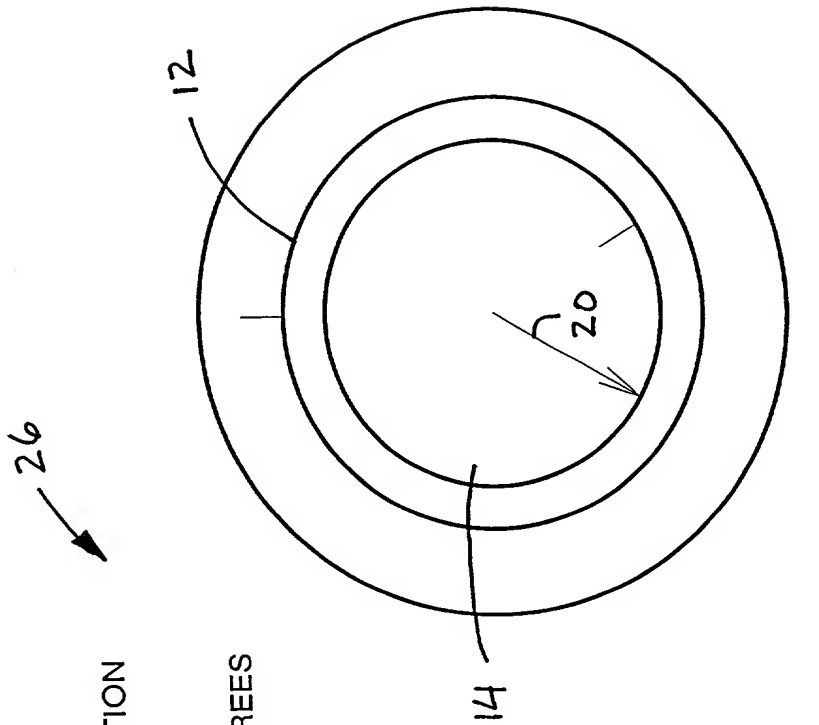
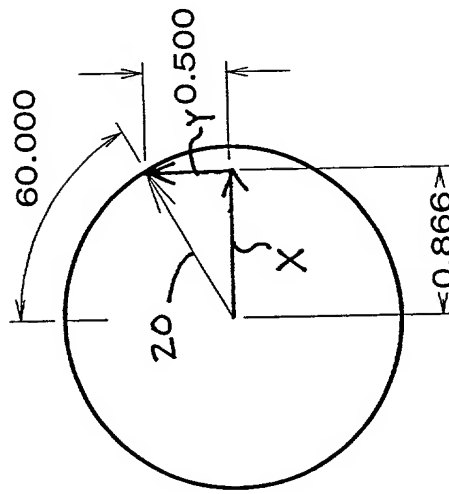


FIG. 2



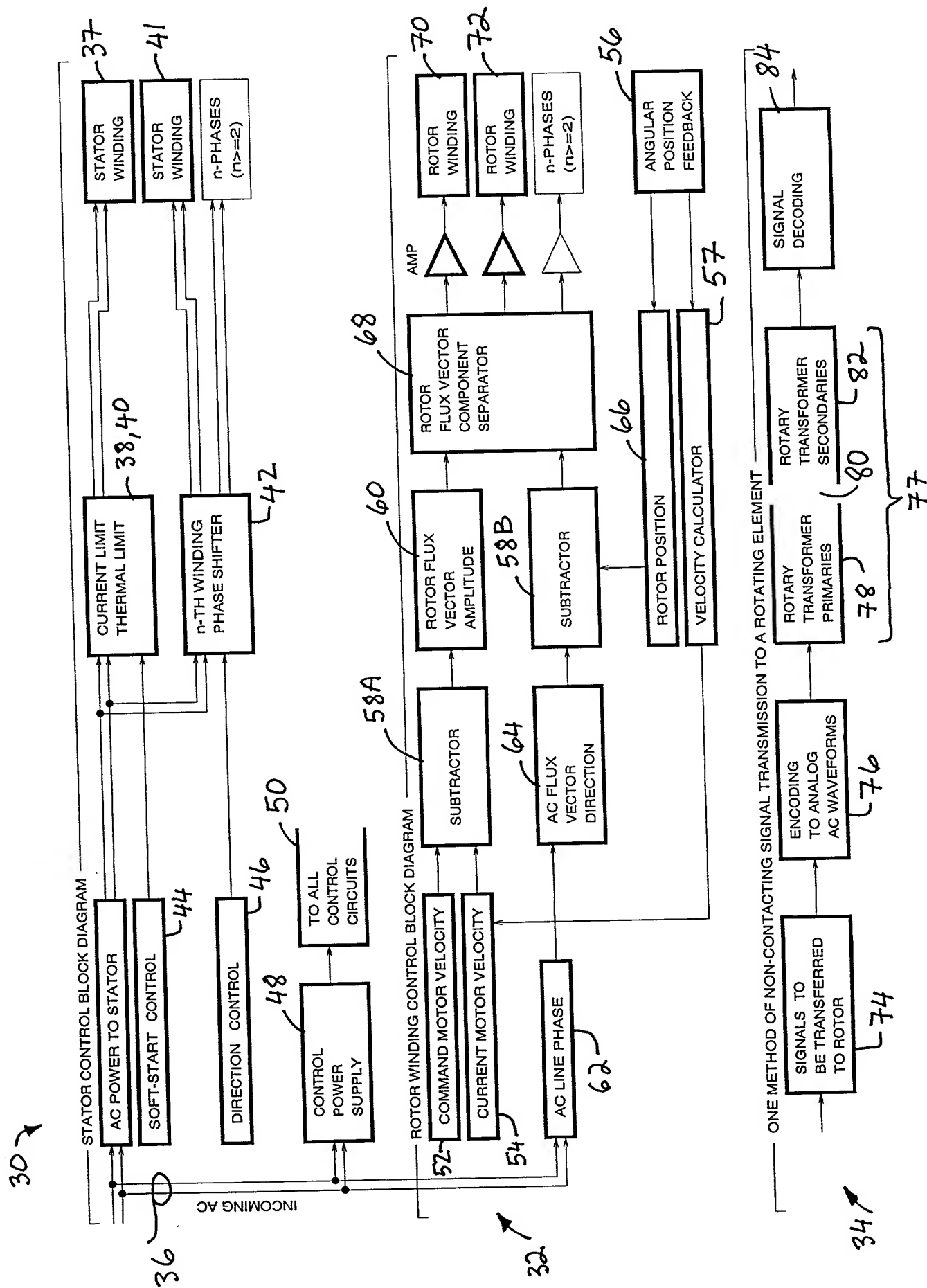
EXAMPLE OF ROTOR FLUX VECTOR COMPONENT SEPARATION

CASE:
ROTOR WINDING FLUX VECTOR DIRECTION 60 DEGREES
2-PHASE ROTOR WINDING



COMPONENT X DRIVE CURRENT SCALING FACTOR 0.866
COMPONENT Y DRIVE CURRENT SCALING FACTOR 0.500

Fig. 3



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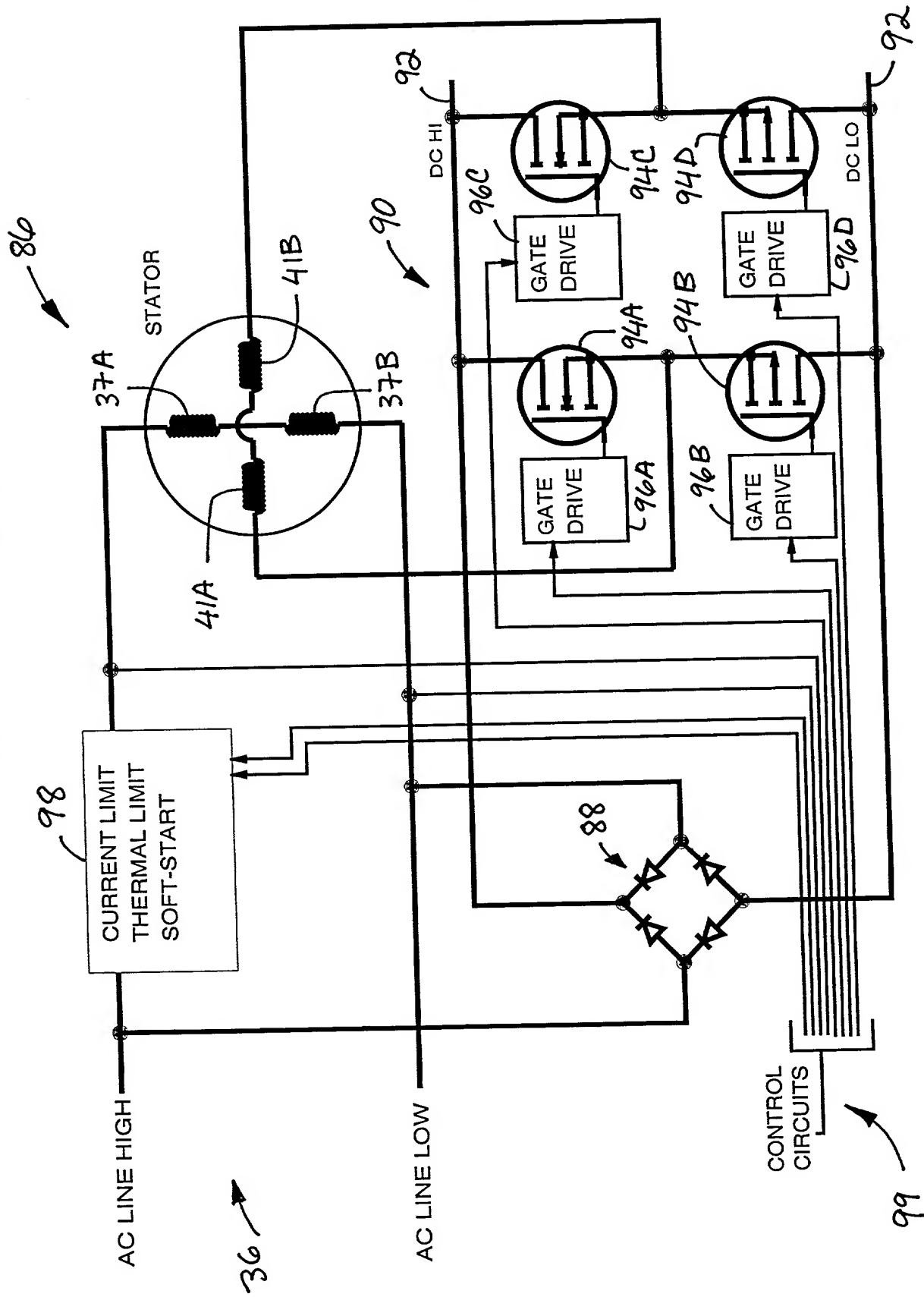


FIG. 5

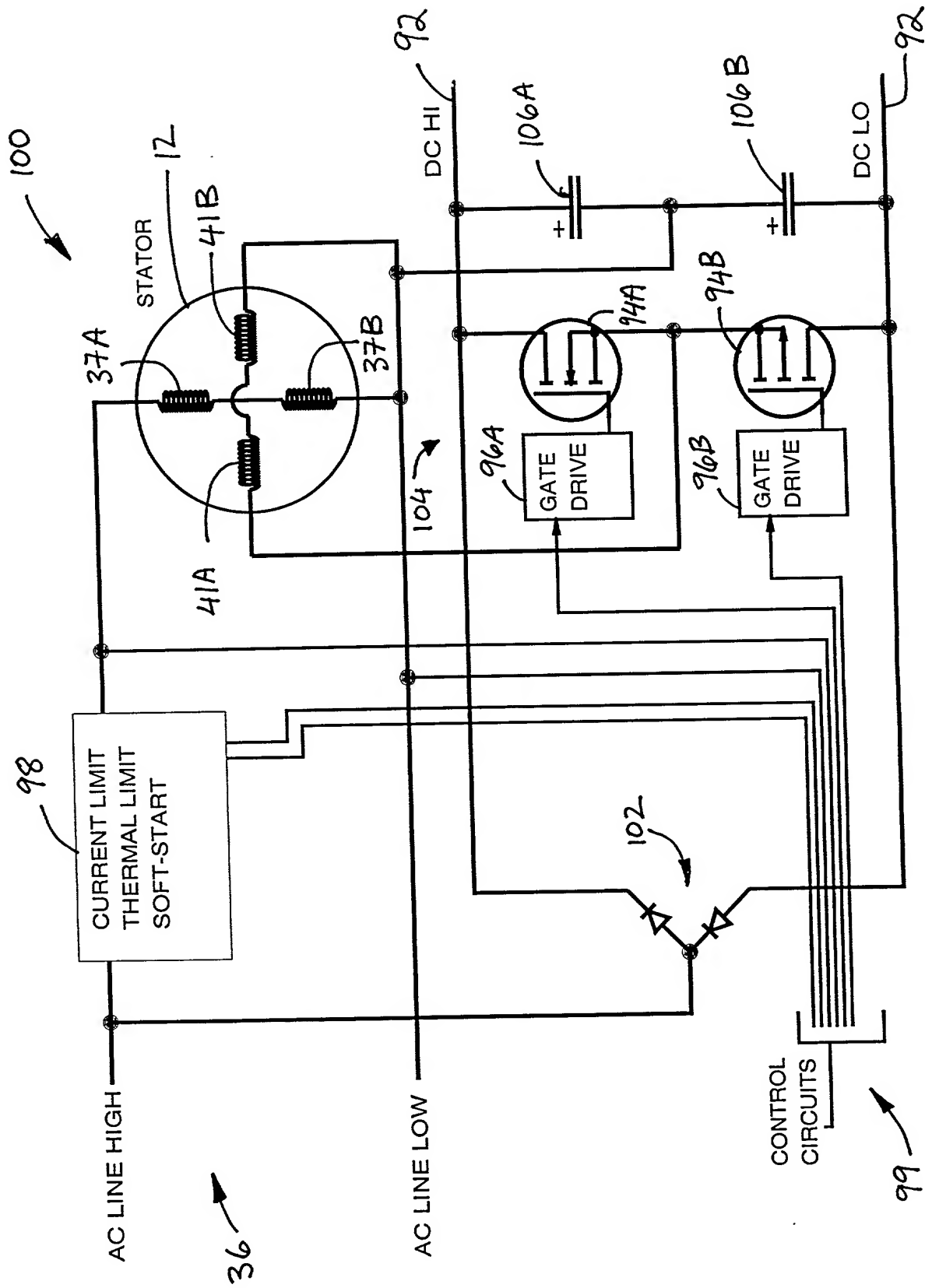


FIG. 6

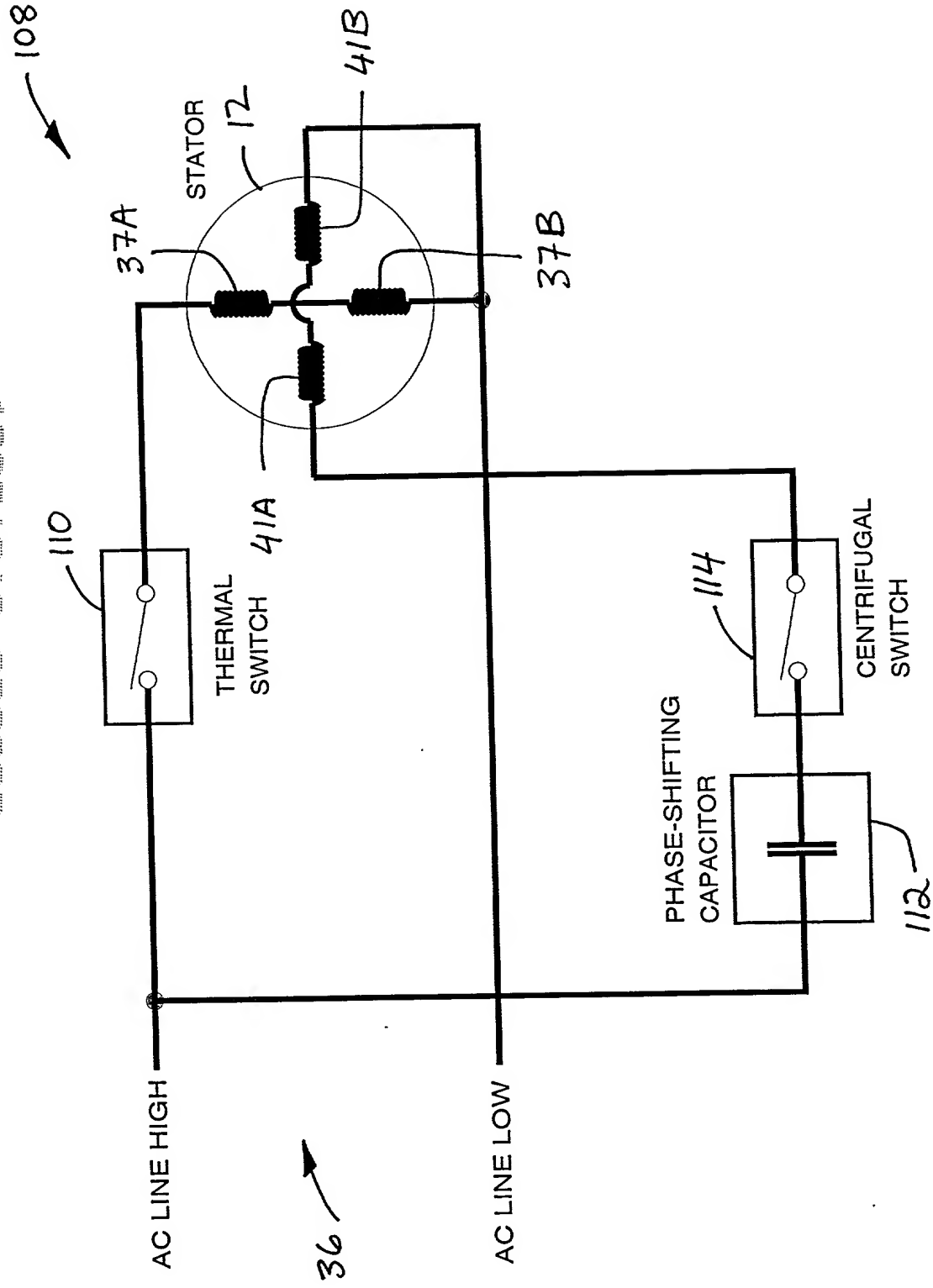


FIG. 7

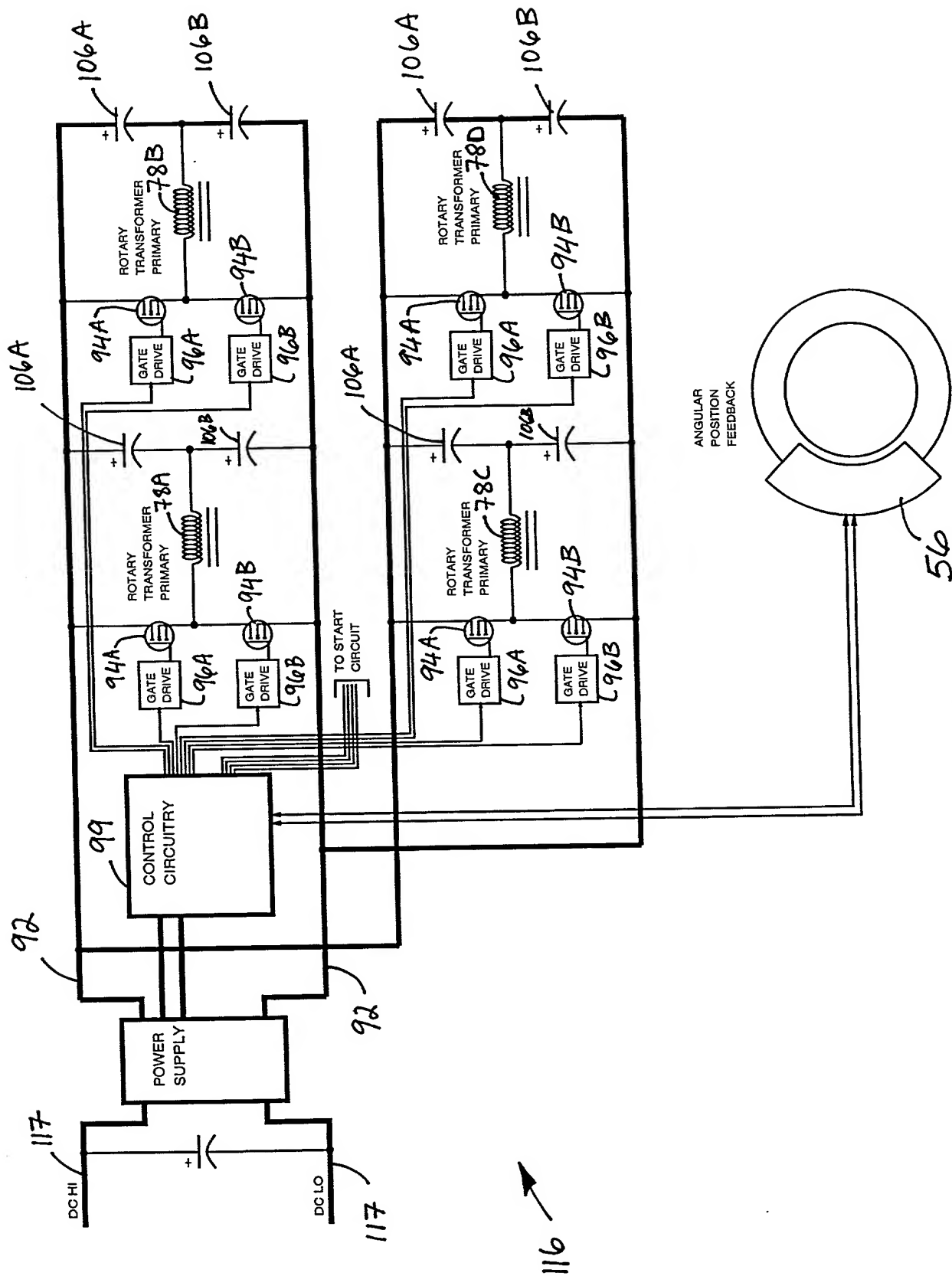


FIG. 8

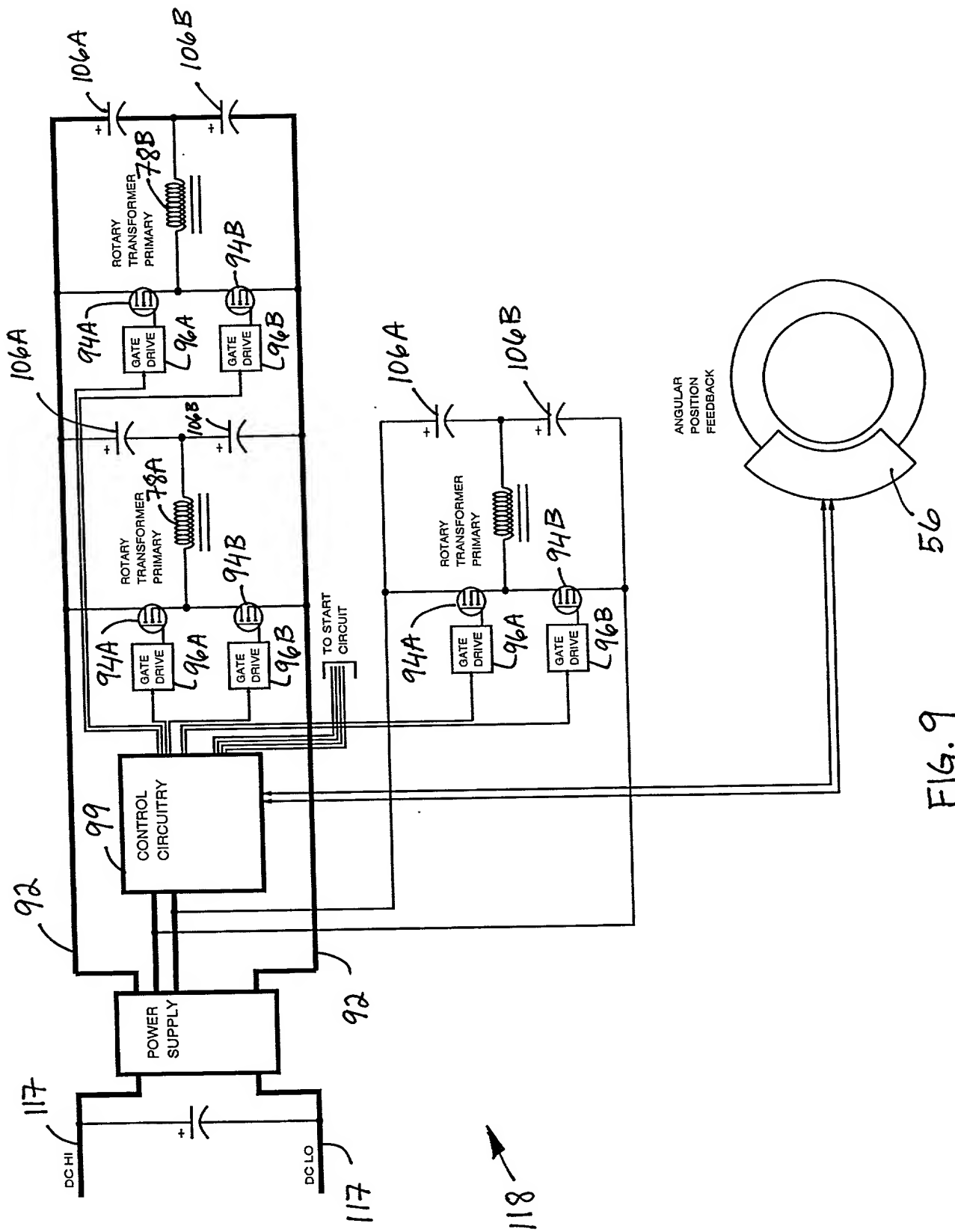
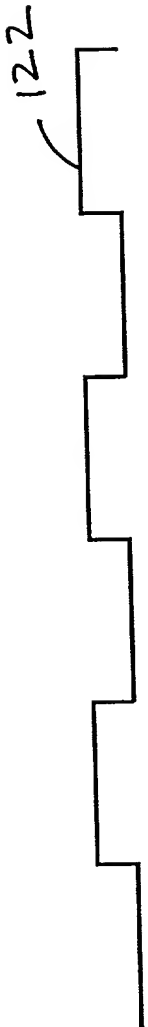


FIG. 9

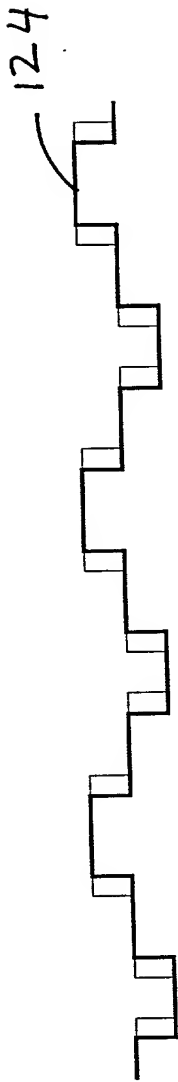
208020" 0T6T200T

120 →

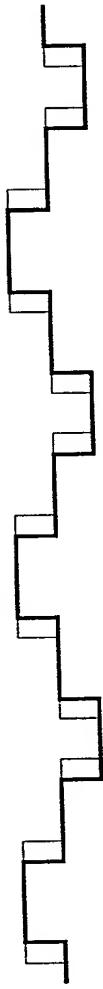
20kHz REF



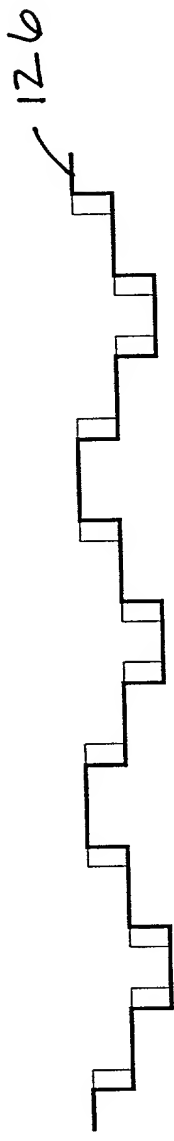
A WINDING
SAMPLE
POSITIVE
DRIVE



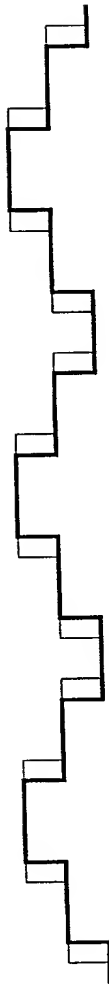
A WINDING
SAMPLE
NEGATIVE
DRIVE



B WINDING
SAMPLE
POSITIVE
DRIVE

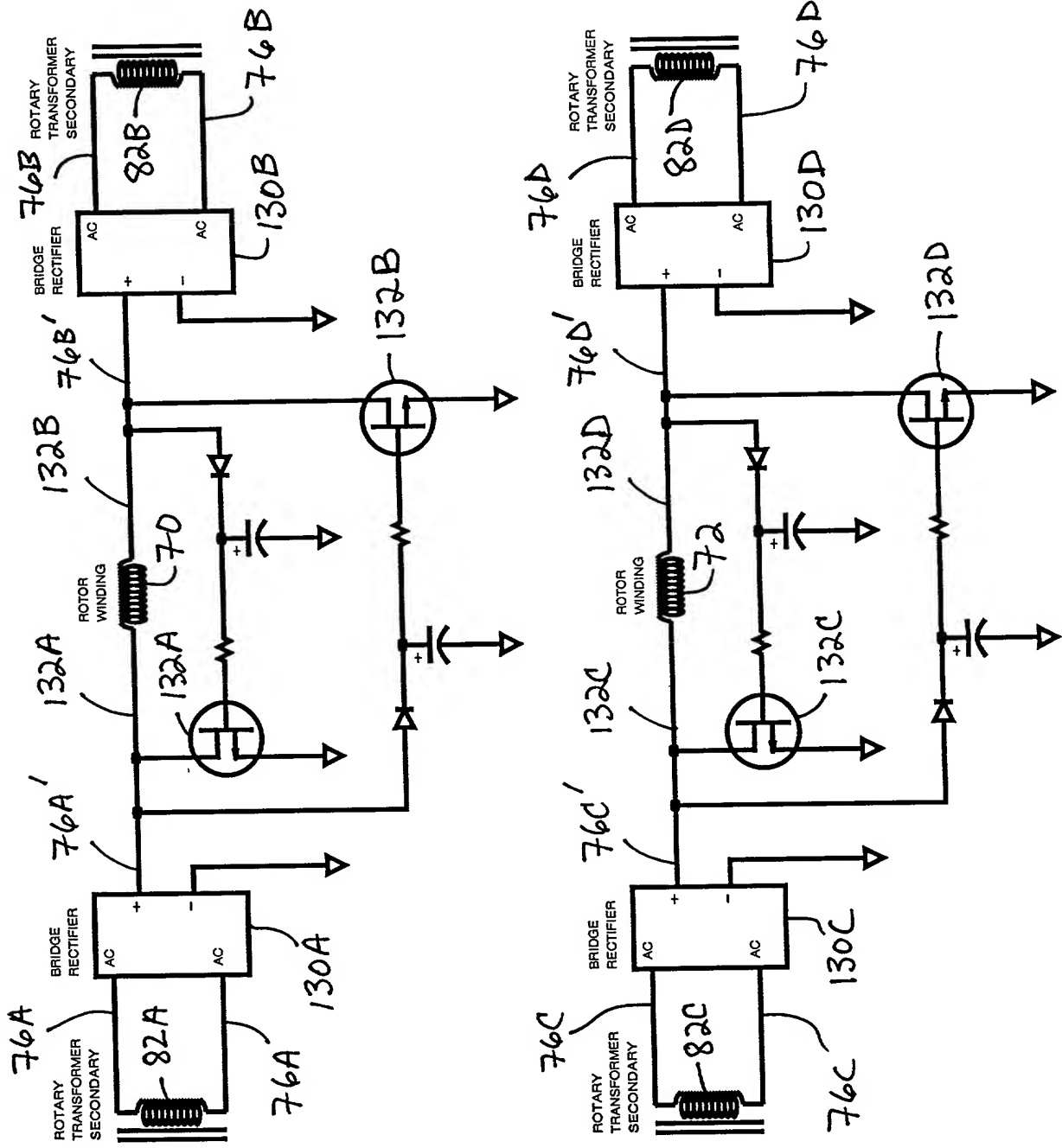


B WINDING
SAMPLE
NEGATIVE
DRIVE



THREE-TRANSFORMER DRIVE TIMING DIAGRAM

FIG. 10



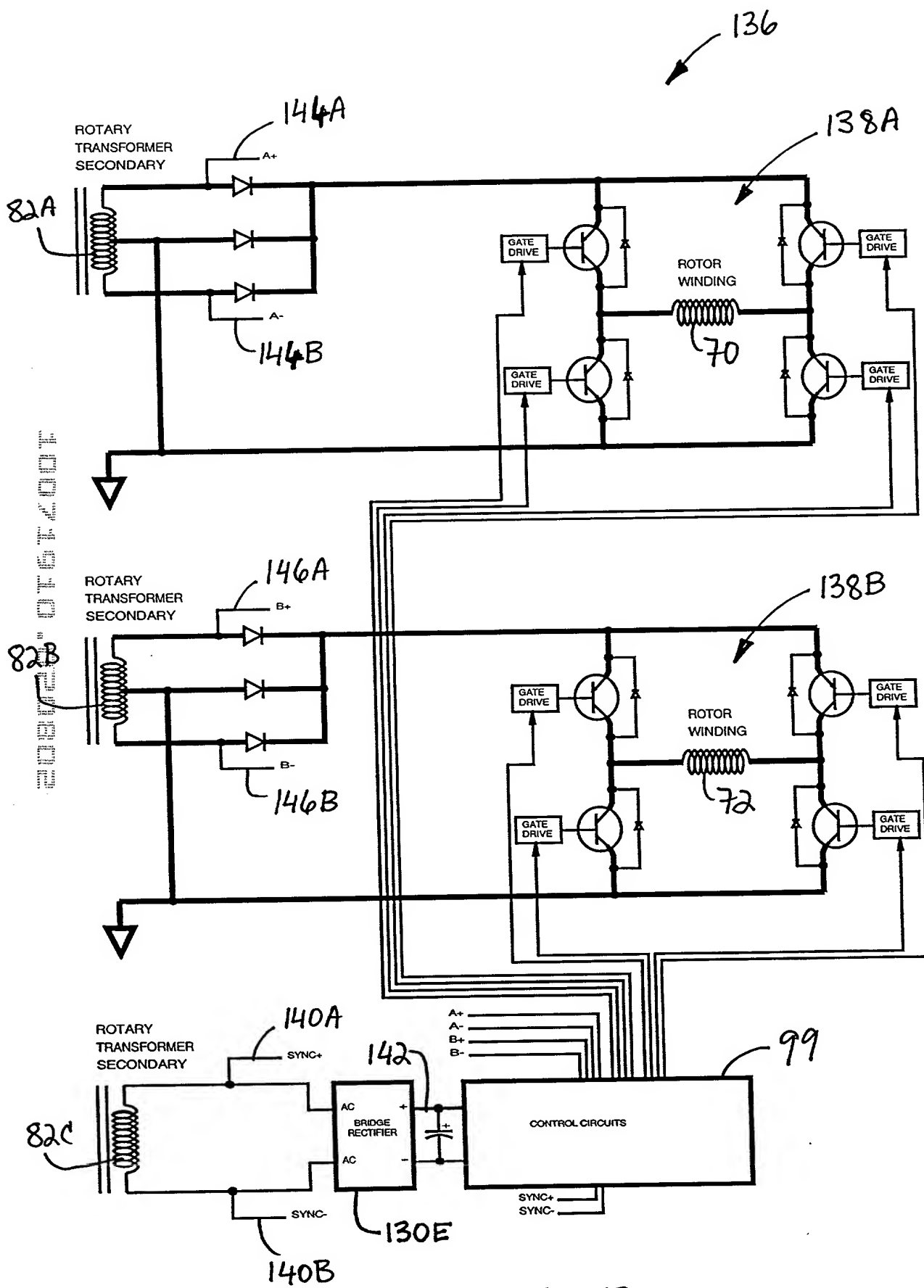


FIG. 12

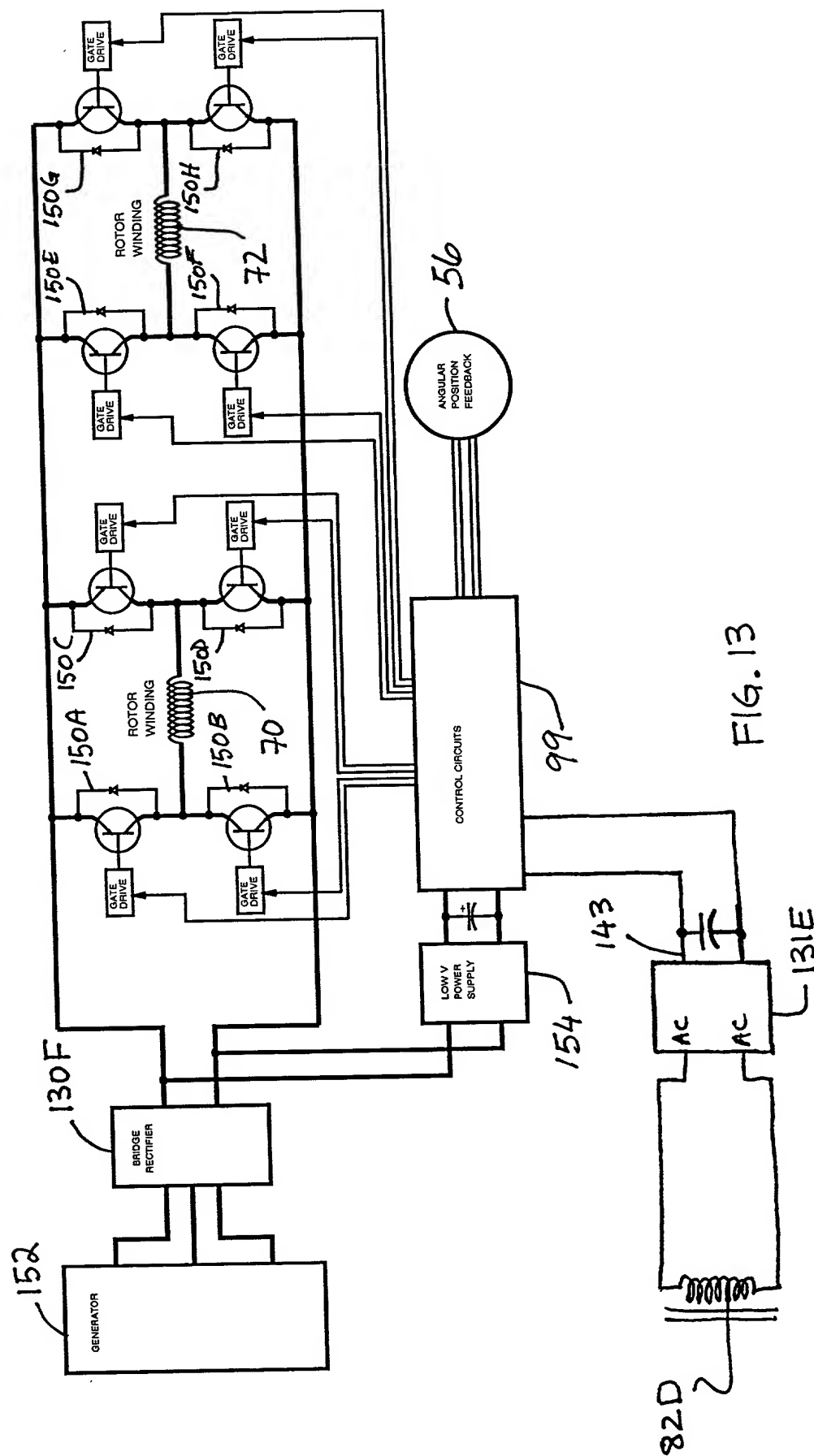
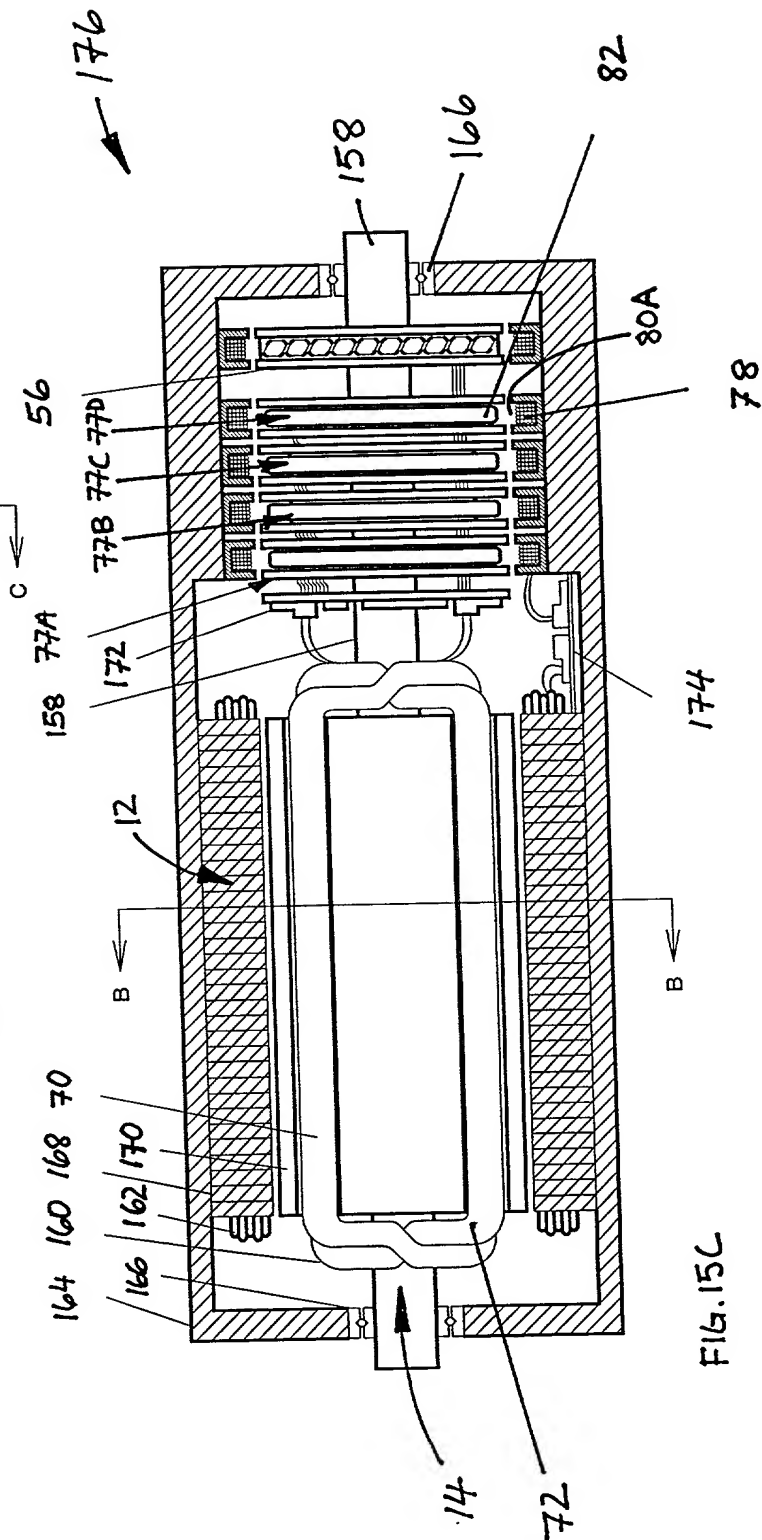
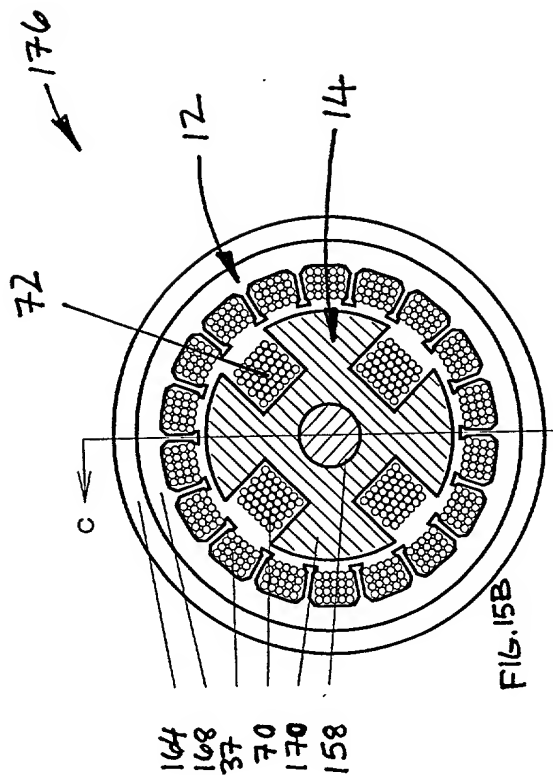
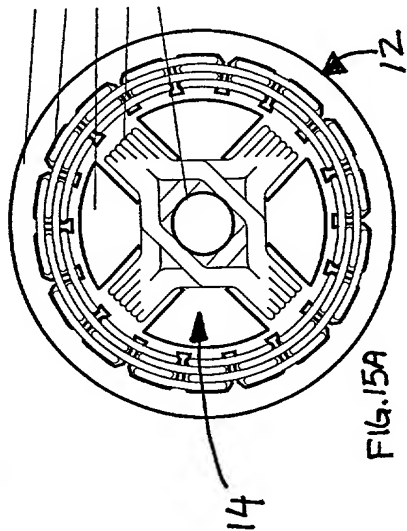
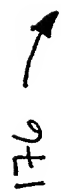


Fig. 13



178

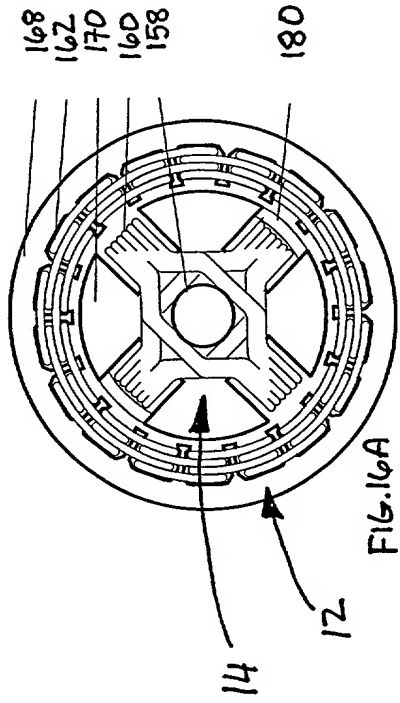


FIG. 16A

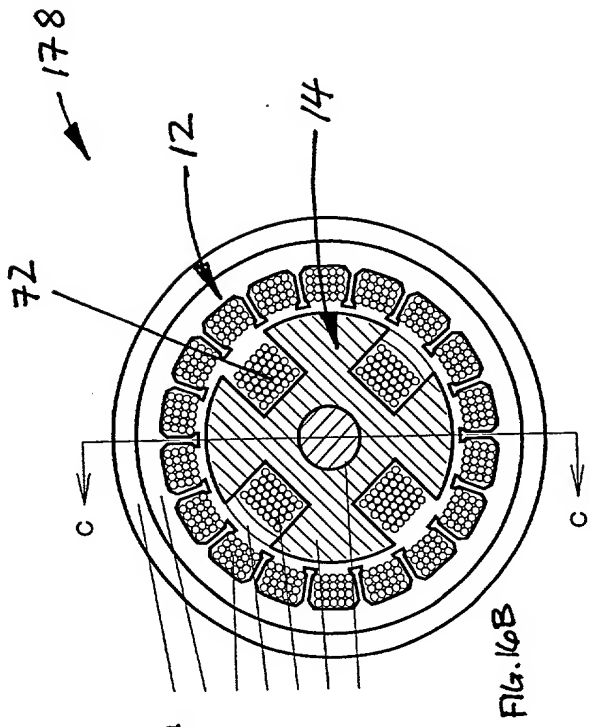


FIG. 16B

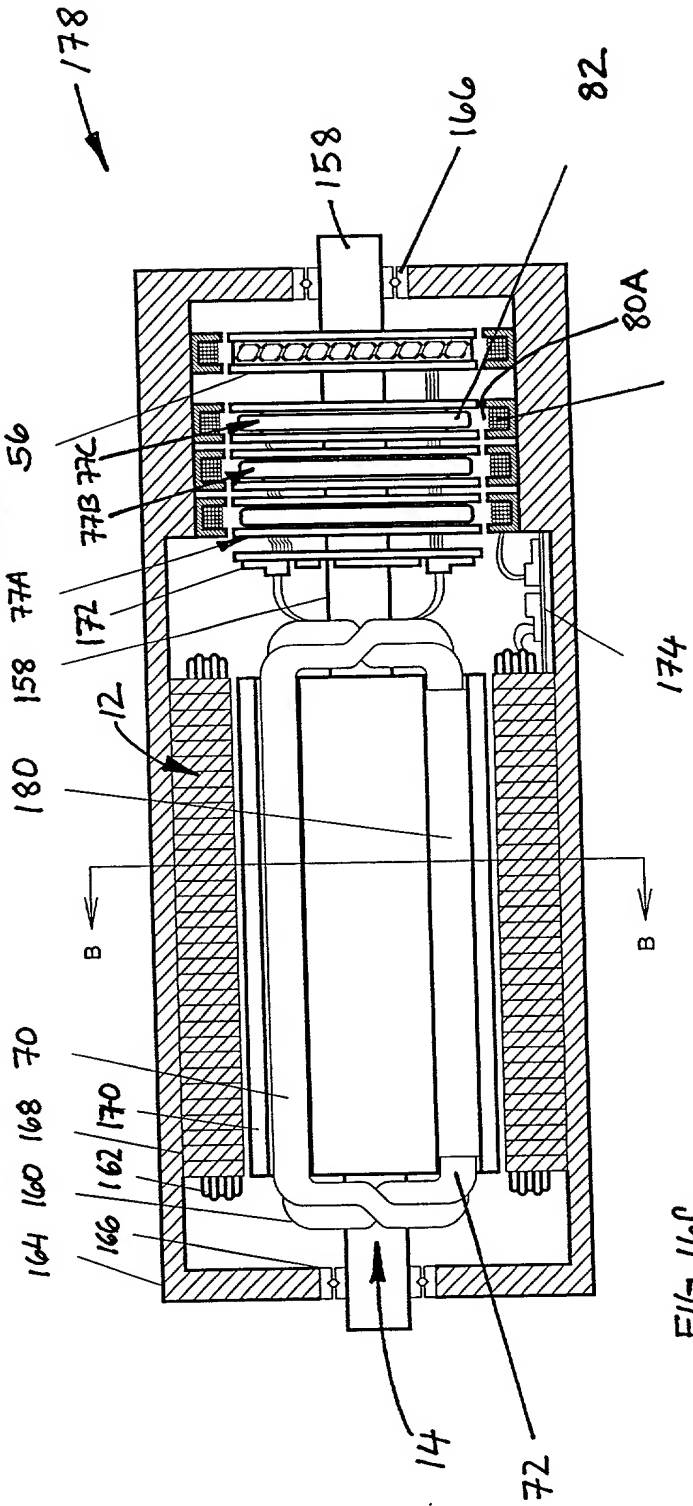
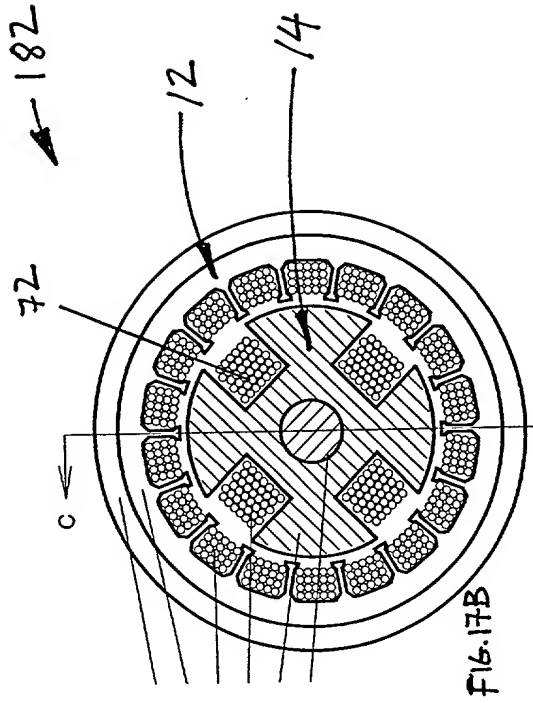


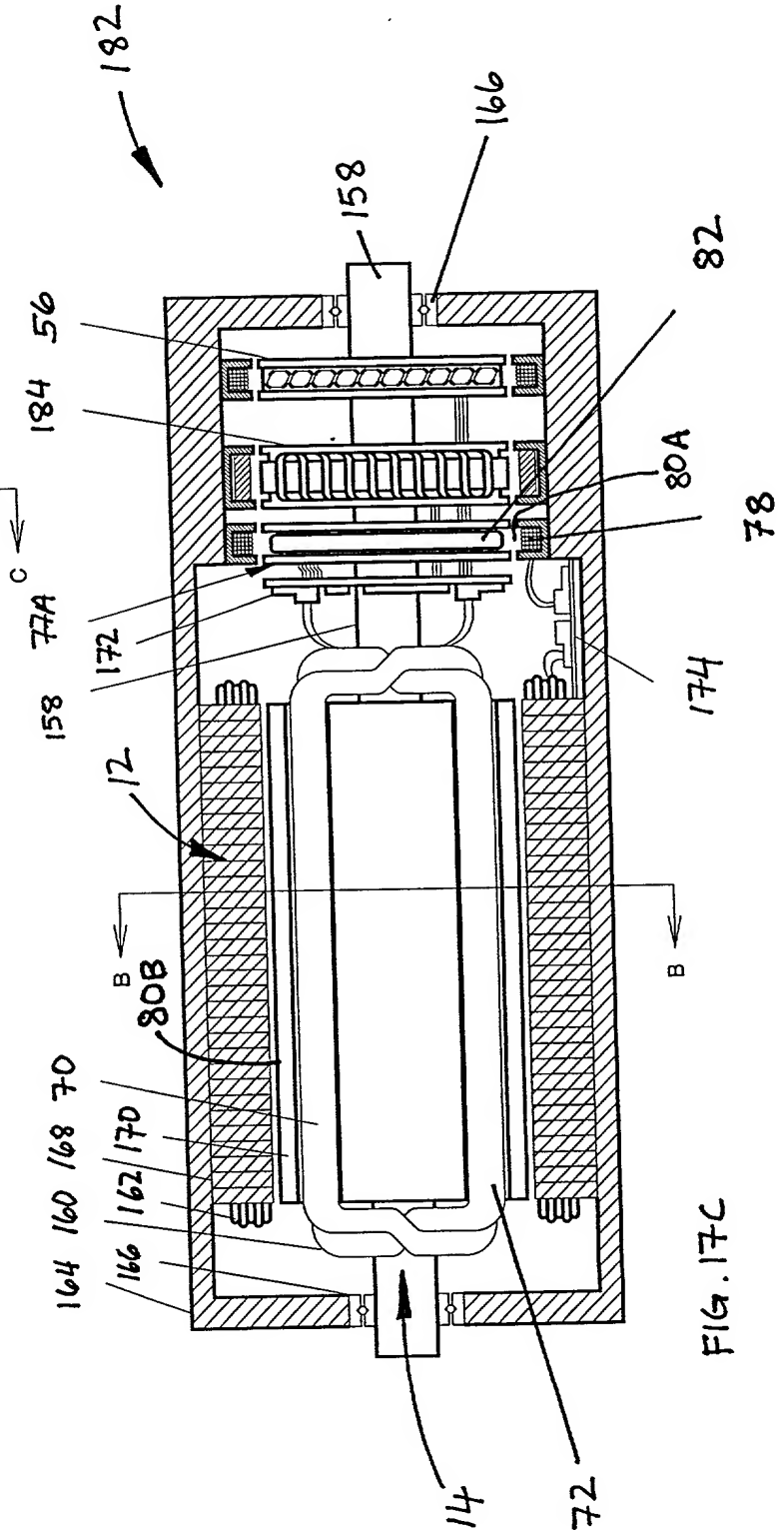
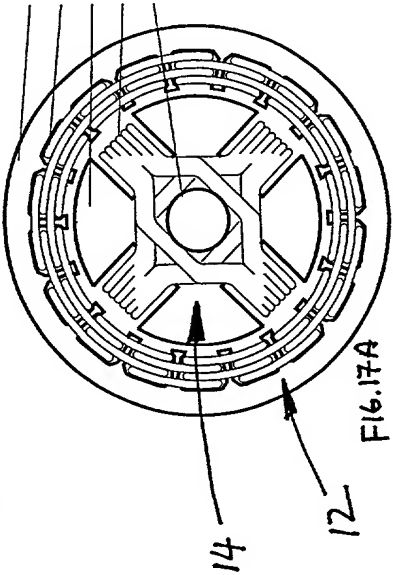
FIG. 16C

78



168
162
170
160
158

164
168
37
70
170
158



80C

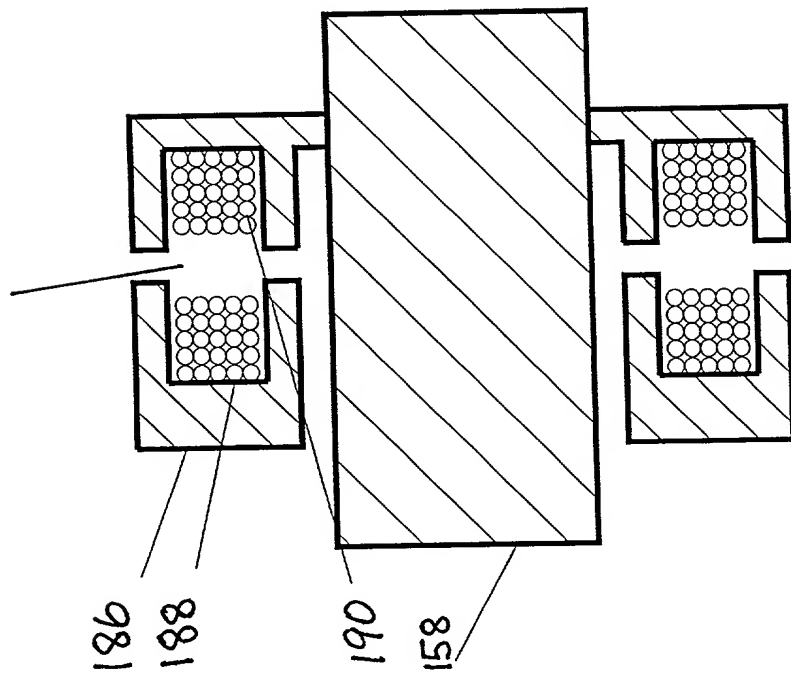


FIG. 18B

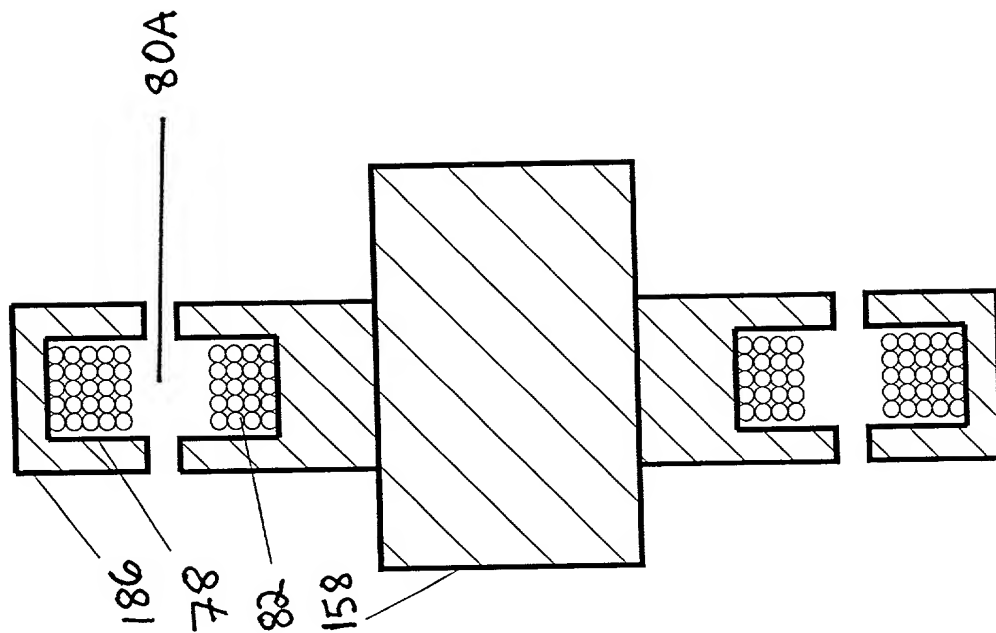


FIG. 18A